Cable Modem User Guide

Congratulations on your decision to subscribe to RCN's Cable Modem Service! We are excited to welcome you to our growing family of customers who are experiencing the advantages of high-speed Internet access. This guide has been designed to serve as a quick reference tool that highlights several different areas of our service.

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Section 1
2-Way Cable Modem Service

Service Overview

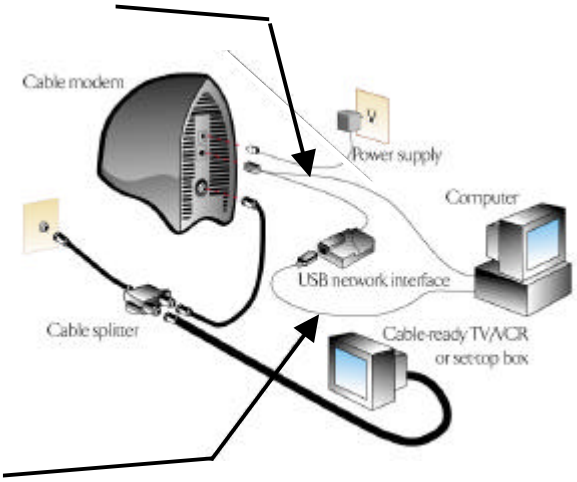
Your RCN high speed Internet access is delivered to you via the same coaxial cable that is used for RCN cable television service*. With this service you can both receive and send data at blazing speeds, up to 500kbps or more. No phone line is needed and your Internet service stays on 24x7.

So, how does it work? The coaxial cable that extends from your wall plugs into the coax connector on the back of your modem (the coax connector looks just like what you plug your cable TV into on your TV or converter box). There is then an Ethernet cable that will connect from the Ethernet port on the back of the modem (sometimes called a "LAN" port) to the Ethernet port from your Network Interface Card (NIC) in your computer. Alternatively, you may have a USB network interface which allows you to forgo the NIC altogether. If that is the case, you will have a cable going from the USB network interface into your USB port on the back of your computer and another cable going from the USB network interface into the Ethernet port on the back of your modem.

*RCN's Cable television service is not required in order to receive high speed Internet service.

Hardware
Cable Modem Service Diagram

This cable plugs into the RJ-45 jack on your NIC or into your computer's built-in Ethernet port and into the cable modem's RJ-45 jack.



This cable plugs into your USB network interface's RJ-45 jack and into the cable modem's RJ-45 jack.

Modem Light Descriptions

There is a series of lights located on the front of your cable modem. Each light signifies a different activity occurring with your cable modem. These lights can be used to diagnose most problems with your cable modem service. Please refer to the tables below for a complete explanation of each light.

3Com Tailfin Modem

This light blinks to indicate data is being transmitted.	This light is not used.	This light indicates the ethernet connection status. These blink patterns are shown on the small LED behind the tailfin. **Slow Blinking Orange Light:** Start-up/power-on self test **Solid Orange Light:** Failed power-on self-test Please contact Tech Support. **Fast Blinking Orange Light:** Downstream hunt **Blinking Orange and Green Light:** Acquisition in process **Fast Blinking Green Light:** Offline, not authorized for service. Please contact Tech Support. **Solid Green Light:** Fully operational state	A solid green light indicates that the cable modem is receiving power. You will also hear an audio notification once power is applied.

3Com CMX Modem

1st Light Power Light	2nd Light Status Light	3rd Light PC Link Status Light	4th Light PC Link Activity Light	5th Light Cable Activity Light	6th Light FCN Light
This light is solid green when the power is on.	This light should be solid green - which means the modem is synced up. If the light is blinking, unplug the power from the modem for approx. 30 seconds and then plug it back in. The light should go solid within a few minutes. If not, please contact Tech Support. For one-way modems, the light changes from orange/green status ready to solid green when validated by POP server.	A solid light indicates a good Ethernet connection. If the light is blinking or unlit, make sure that the Ethernet cable is plugged in securely to both the modem and the computer. If that does not fix the problem it may be an ethernet cable, modem or network card issue; please contact Tech Support.	A blinking light indicates that data is flowing between the modem and computer.	A blinking light indicates that the modem is receiving data.	This light is not used.

Toshiba PCX1100

1st Light Power Light	2nd Light Cable Light	3rd Light PC Link Status Light	4th Light Data Activity Light	5th Light Test
This light is solid green when the power is on.	This light is solid green when the cable modem is registered on the network and ready to transfer data.	This light is solid green when an Ethernet connection exists between the modem and the client computer.	A blinking green light indicates that data is flowing between the modem and computer.	This light should be off during normal modem operation.

RCA DCM-215

1st Light Power Light	2nd Light PC Link	3rd Light Cable	4th Light Data Activity Light	5th Light Email
This light will be on when the modem has power. It will be off, however, if the modem is in standby mode.	This light will be solid if there is an Ethernet connection between the modem and client computer. Additionally, this light will flash if data is being transmitted	This light will be solid when the modem is registered with the network and data can be sent. It will be off in standby mode.	This light will flash when data is being sent to or received from the cable network.	This light is not used by RCN. It should remain off in normal operation.

	over the Ethernet connection. If the modem is in standby mode, this light will be off.			

Nortel/Bay Network Modems

1st Light Power Light	2nd Light CM OK Light	3rd Light Ethernet Link Light	4th Light PC Link Activity Light	5th Light Broadband Activity Light	6th Light Broadband Sync Light
This light indicates the modem is receiving electrical power.	This light indicates that the modem is functioning properly.	A solid light indicates a good ethernet connection. If the light is blinking or unlit, make sure that the ethernet cable is plugged in securely to both the modem and the computer. If that does not fix the problem it may be an ethernet cable issue, modem issue or Network Card issue. Please contact Tech Support.	If this light is blinking it indicates that data is flowing between the modem and computer.	This light will flash to indicate that the modem is receiving data.	This light should be solid green - which means the modem is synced up. If the light is blinking, unplug the power from the modem for approx. 30 seconds and then plug it back in. The light should go solid within a few minutes. If not, please contact Tech Support.

Section 2
1-Way Cable Modem Service

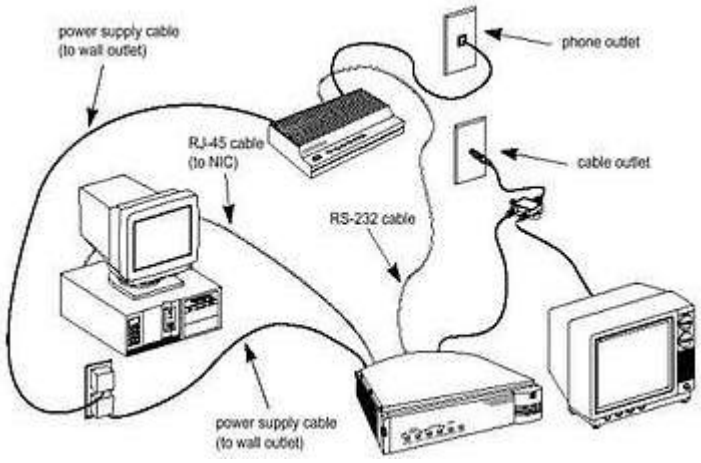
Service Overview

Your RCN high speed Internet access is delivered to you via the same coaxial cable that is used for RCN cable television service*. However, in some markets, our Cable Modem service is "1-way", meaning all data coming to you arrives over cable, but anything you upload or send goes over your telephone line. The data you receive or download will arrive at up to 500kbps or more. The data you send will be sent as quickly as your analog modem** will allow. Although the slower upload speeds you will experience may seem like a hindrance, it's not that much of a detriment when you consider that most of what you do on the Internet involves downloading (receiving web pages, getting e-mail, downloading programs or files, etc.), not uploading (sending e-mail, publishing your site, etc.).

So, how does it work? The coaxial cable that extends from your wall plugs into the coax connector on the back of your modem (the coax connector looks just like what you plug your cable TV into on your TV or converter box). There is then an Ethernet cable that will connect from the Ethernet port on the back of the modem (sometimes called a "LAN" port) to the Ethernet port from your Network Interface Card (NIC) in your computer. Alternatively, you may have a USB network interface which allows you to forgo the NIC altogether. If that is the case, you will have a cable going from the USB network interface into your USB port on the back of your computer and another cable going from the USB network interface into the Ethernet port on the back of your modem. Finally, you will have a telephone cable connect from the phone jack in the back of your cable modem to your analog modem and another telephone cable connecting your analog modem to your phone jack on your wall. Be sure to plug the correct cables into the correct ports on your analog modem. Typically you will have two ports labeled "line" and "phone" or something similar. Make sure you've plugged the cable leading to your phone jack in the wall into the "line" port and the cable plugged into the cable modem into the "phone" jack.

*RCN's Cable television service is not required in order to receive high speed Internet service.
**You are responsible for providing your own analog modem. RCN will not supply one for you.

Hardware
Cable Modem Service Diagram



Modem Light Descriptions

There is a series of lights located on the front of your cable modem. Each light signifies a different activity occurring with your cable modem. These lights can be used to diagnose most problems with your cable modem service. Please refer to the tables below for a complete explanation of each light.

3Com CMX/TMX Modem

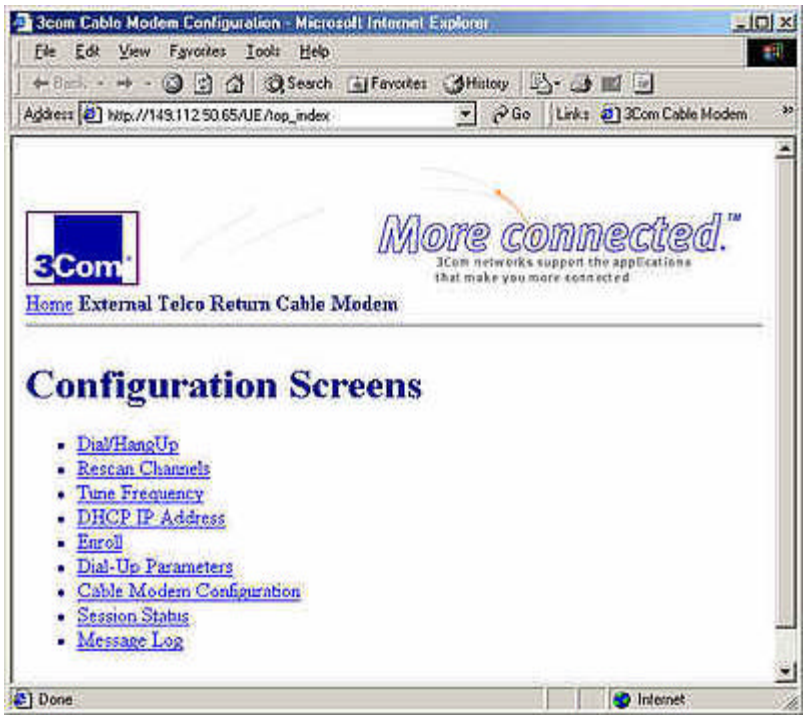
1st Light Power Light	2nd Light Status Light	3rd Light PC Link Status Light	4th Light PC Link Activity Light	5th Light Cable Activity Light	6th Light FCN Light
This light is solid green when the power is on.	This light should be solid green - which means the modem is synced up. If the light is blinking, unplug the power from the modem for approx. 30 seconds and then plug it back in. The light should go solid within a few minutes. If not, please contact Tech Support. For one-way modems, the light changes from orange/green status ready to solid green when validated by POP server.	A solid light indicates a good Ethernet connection. If the light is blinking or unlit, make sure that the Ethernet cable is plugged in securely to both the modem and the computer. If that does not fix the problem it may be an ethernet cable, modem or network card issue; please contact Tech Support.	A blinking light indicates that data is flowing between the modem and computer.	A blinking light indicates that the modem is receiving data.	This light is not used.

Configuring Your 1-Way Modem

Some areas within RCN's network use one-way modems which require a telephone line to connect for upstream purposes (i.e. sending email, uploading files, etc). If you have one of these modems, please follow these steps. Two-way customers can skip this section.

3 Com 1-Way Setup:

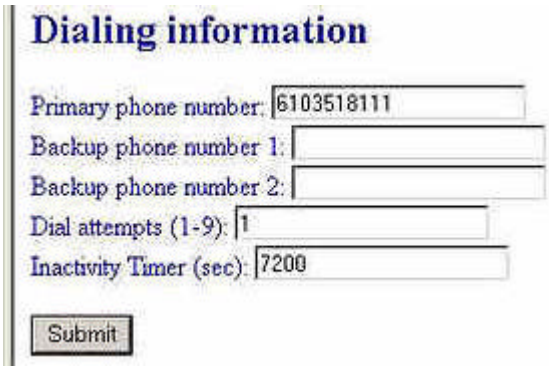
1. Connect the modem to your system.
2. Wait for the modem status light to flash Orange/Green.
3. Renew your IP Address. [See section on renewing your IP address in this document.]
4. Open a browser & type **http://149.112.50.65** You will be taken to the following web page:



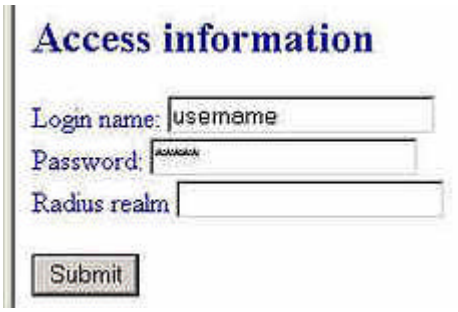
5. Click on the *Enroll* link to setup the configuration for the modem.

6. Select *RCN Dial* and click *Show* to display the properties.

7. Click the *Dial-Up Parameters* link. Only change the *Inactivity Timer* field and enter a value of **7200**. Click *Submit*.



8. Click the *Access Parameters* link and enter your **account name** and **password**. Click *Submit*.



9. Click the *DHCP/PPP Parameters* link. Highlight *PAP Only* and click *submit.*

10. Click *Home* at the top of the 3 Com web page.
11. Click *Dial/Hang Up* and *Dial Phone* to dial the modem.

12. The modem status light will change to solid green when the modem is ready.

Section 3
Securing Your Connection

As a cable modem subscriber, you have access to the Internet at exceptional speeds. In order to provide you this service, you are included as a member of an Ethernet bridge group. This means you share a node with other users and it may be possible for them to gain access to your computer and the files stored in it. Because you are enabled with an "always on" Internet connection, it is important you take the following steps (where appropriate) to ensure the security of your personal computer files and programs:

1. Disable *"File and Print Sharing"*
2. If your computer is not networked to other computers, remove *"Client for Microsoft Networks"*
3. If your computer is networked to other computers, use TCP/IP and a firewall.
4. Turn your computer off when you are away for extended periods of time.

Disabling "File and Print Sharing"

It is important that the *"File and Print Sharing"* option is turned off on your computer. This ensures that your hard disk remains private while using your cable modem.

For Windows Operating Systems

1. From the *Start* menu on your computer, select *Settings* and then *Control Panel.*
2. Select *Network* in the *Control Panel* Menu.
3. Click *File and Print Sharing* located in the *Configuration* tab.
4. Uncheck the following options:
   I want to be able to give others access to my files
   I want to be able to allow others to print to my printer(s).
5. Click *OK*
6. Click *OK* again in the *Network* dialog box.

For Macintosh Operating Systems

1. Select the *Sharing Setup* control panel.
2. If the *File Sharing* dialog box contains a status message that reads *"File Sharing is Off,"* Close the control panel. You do not need to make any changes.
3. If the File Sharing dialog box does not contain the *"File Sharing is Off"* message, select *Stop*.
4. A dialog box will appear asking you how many minutes to wait before turning off file sharing. Enter **0 (zero)**.
5. Click *OK* and close the *Sharing Setup* control panel.

Removing "Client for Microsoft Networks" for Windows 95/98

The Client for Microsoft Networks software automatically loads onto your computer when Windows 95/98 is installed. Not only is this component unnecessary unless you are connecting directly to a Microsoft network (your connection to the Internet does not fall in this category), it will slow down the time it takes your machine to boot, will use memory resources that can be better used elsewhere, and most importantly, can leave your computer open to security breaches via NetBIOS file sharing ports. For a more secure connection to the Internet, you should remove this component if you have not already done so. Please have your original Windows CD handy for this procedure.

1. Right click *Network Neighborhood*
2. Select *Properties*.
3. Select *Client for Microsoft Networks*
4. Click *Remove*.
5. Click *OK.*

Section 4
Troubleshooting Basics

System Requirements

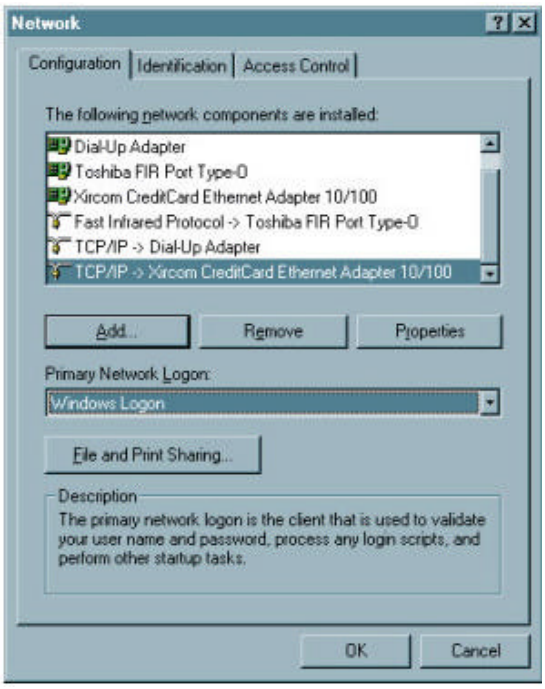
	IBM Compatible Computers	Macintosh Computers
Processor Speed	75 MHz Minimum	PowerPC or Higher (RCN recommends 150 MHz or greater)
Operating System	Windows 95,98,2000 (Professional Operating System with TCP/IP Stack Software installed), ME, or NT 4.0	7.6.1 or higher (it is recommended that you use the latest version of Open Transport compatible with your system)
Memory/RAM	32MB (64MB required for Windows 2000)	32MB
Hard Drive Free Space	60MB (RCN recommends greater than 90MB to fully utilize all features.)	60 MB (RCN recommends greater than 90MB to fully utilize all features.)
SVGA Monitor	Recommended	Recommended
CD-ROM	Required	Required
NIC Card	10 Base-T or 10/100 Base-T (RCN highly recommends that you have the NIC card installed and tested by a computer technician to ensure that it works properly.)	Required (Some Mac's come pre-installed with an NIC card. If not, you will need to install an NIC card. Users must have the latest version of Open Transport 2.6 installed.)

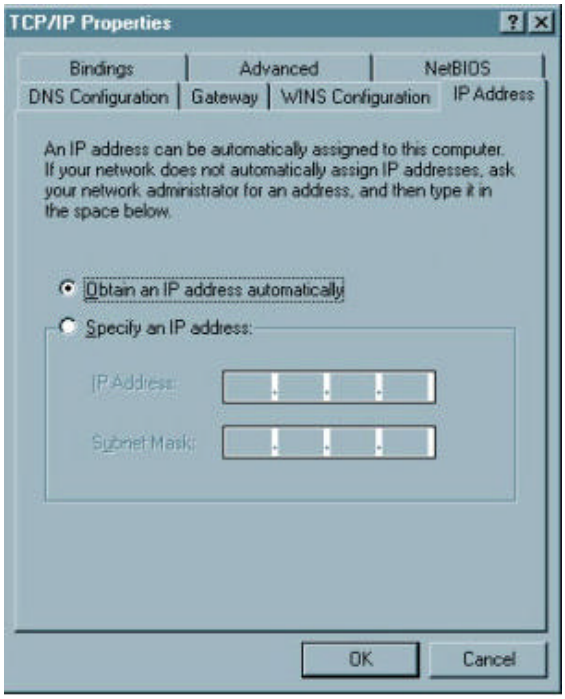
Configuring your Network Settings

RCN's network uses the DHCP method of assigning IP Addresses, which means that your computer is automatically given an IP Address when you use our cable modem service. To use your cable modem on RCN's network, the network settings on your computer must be set properly to allow DHCP to perform this function.

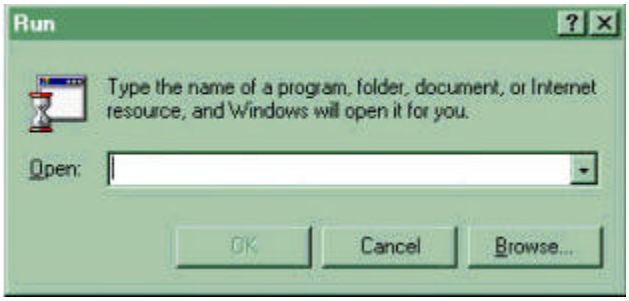
For Windows 95/98

1. Right click on the *Network Neighborhood* icon which should be located on your desktop. Click on *Properties*.
2. Select *TCP/IP* for the ethernet card that is installed in your computer. (The standard cards RCN uses are the *Intel Pro 100 ISA, Pro 100+ Management and Netgear Adapters.)* Click the *Properties* button. The box on the left shows TCP/IP highlighted for the ethernet card, and the box on the right is the window that opens after clicking the *Properties* button.

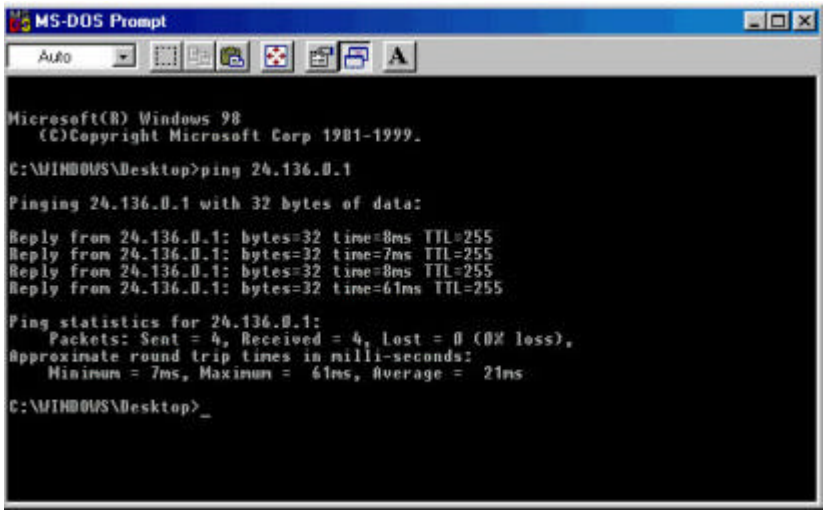




3. Select the *IP Address* tab. Make sure "*Obtain an IP address automatically*" is selected.
4. Click *OK*. This will close the *TCP/IP properties* window. You will then need to click *OK* again in the *Network* window, and then restart your computer when prompted to do so.
5. After the computer has restarted, you can perform a *Ping* test to see if your computer is communicating with our network. Click on the *Start* button in the bottom left hand corner of your screen. Click on *Run* and the following window will pop up.



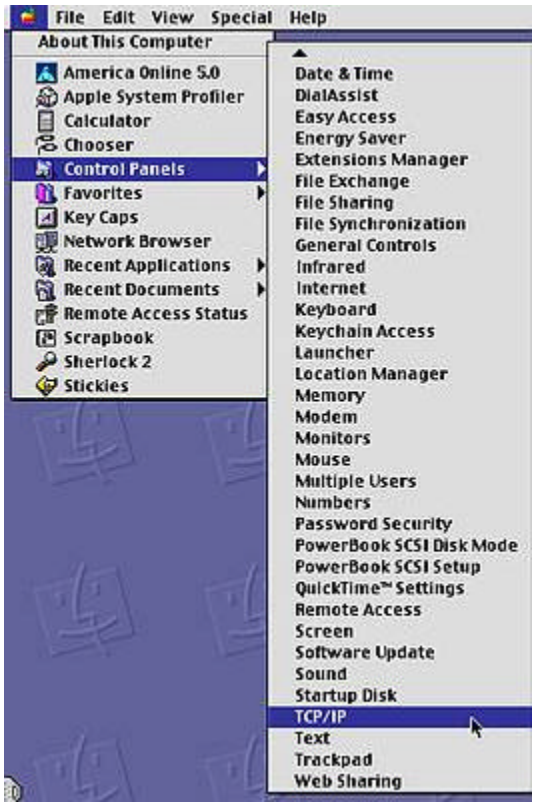
6. Type in the word **command**. This will bring up the DOS prompt. At the prompt, type **ping 207.172.3.8** or **ping 207.172.3.9.** (You can type in any active IP address). If your computer is communicating with the network, you will see the following box. If your computer is not communicating, you will see messages that your request has timed out.



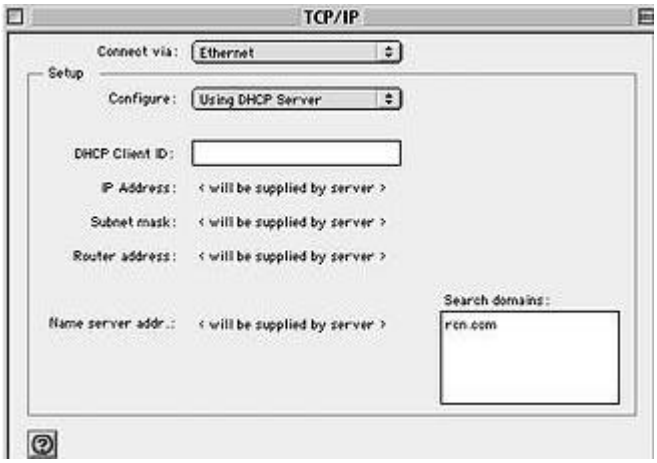
7. If your computer is not communicating with the network, you need to find out if it has obtained a Dynamic IP Address from the DHCP server. To do this, you will use a built in utility called *winipcfg* (Windows IP Configuration). For more information, go to the next section on "Releasing/Renewing an IP Address."

For Macintosh

1. Click on the apple in the upper left hand corner of your screen and choose *Control Panels* and then *TCP/IP*. If TCP/IP is unavailable, configure TCP/IP in the *Extensions Manager*.



2. You will see the following screen:



3. Choose to connect via *Ethernet.* If Ethernet is unavailable, configure Ethernet in the *Extensions Manager*.
4. Choose to configure *Using DHCP Server*.
5. Make sure that the *IP Address*, *Subnet Mask*, *Router Address*, and *Name Server Address* will all be supplied by the server.
6. Enter **rcn.com** into the Search Domains as shown.
7. Click *Save Changes* if asked.

Please note. There is a known problem with DHCP and the Mac OS, pre OS X. Essentially, if the DHCP address is not assigned in time, the Mac will assign its own address; one which will not work. To resolve this problem upgrade your version of Open Transport to version 2.6 or please try the following.

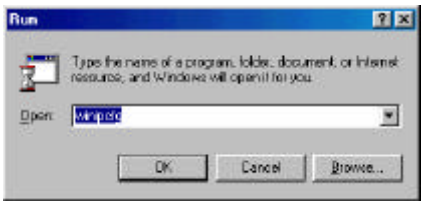
1. Unplug your Ethernet cable from the back of the cable modem.
2. Power cycle your modem and computer per the instructions noted later in this guide.
3. Trash your TCP/IP preferences by opening your *Systems* folder and dragging *MacTCP DNR* to the trash. From within the *Systems* folder, drag *TCP/IP Preferences* to the trash as well.
4. Double check your settings as outlined above and ensure they are correct.
5. Plug the Ethernet cable back into the computer.
6. Close the TCP/IP control panel window and save the changes when prompted. Do not restart the computer.
7. Try to go to a web site with your browser. If your connection is still not working, please continue with the next step. If it is working, you're all set.
8. Repeat steps 1-4 and then skip to step 9.
9. Click *Edit* from the menus and then choose *User Mode*.
10. Select *Advanced* and click *OK*.
11. In the TCP/IP window, click the *Options* button. Make sure *Active* is selected and "*Load Only When Needed* " is checked. Click *OK*.
12. Click *File* from the menus and then select *Configuration.*
13. The default configuration should be highlighted. Click *Duplicate*.
14. You will be asked to specify a name for the copy, usually *Default Copy*. Just click *OK* to accept that name.
15. Highlight the configuration you just created and then click *Make Active*.
16. At this point, in the TCP/IP window, IP Address, Subnet Mask, and Router Address should all say *<will be supplied by server>.* Plug the Ethernet cable back into the computer.
17. Close the TCP/IP window and save the changes when prompted. Do not restart the computer.
18. Test your connection by going to a web site.

Releasing/Renewing an IP Address

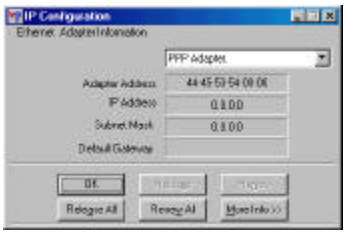
For computers to communicate with each other they must have an IP address (Internet Protocol Address in the form of xxx.xxx.xxx.xxx . . .ex. 169.43.55.22). Furthermore, to properly communicate on a certain network (such as RCN's network) you must have an IP Address from that given network. To make sure you currently have an IP Address from RCN's server, please complete the following steps.

Releasing/Renewing an IP Address on a Windows 95/98 Machine

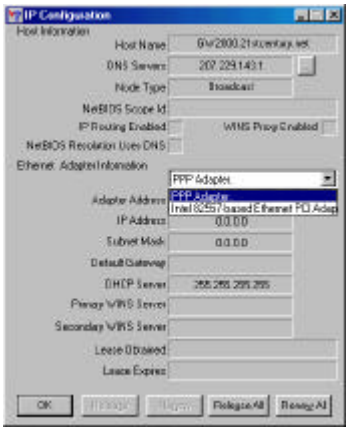
1. Click the *Start* menu in the lower left hand corner of your screen.
2. Click *Run*.
3. In the *Open* box type **winipcfg** and Click *OK*.



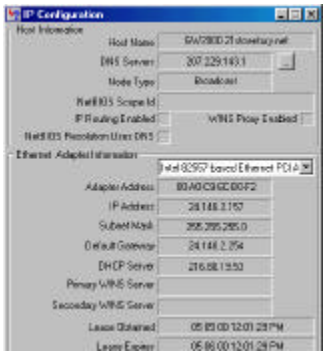
This will bring you to the *IP Configuration* box.



4. The drop-down menu at the top lists the network adapters installed on your computer. You must choose your computer's Ethernet Adapter from this list to get the correct TCP/IP information. When done, click on the *More Info* button.



This will show you the IP Address that is associated with each adapter.



5. Click the *Release All* button. The IP Address value should go to all zeroes.
6. Click the *Renew All* button. The IP Address box should now have a new number in it.

Note: The new IP address will contain a series of numbers separated by periods. If the IP Address box is filled in with a 169.x.x.x number your computer is not accessing our DHCP server. The 169.x.x.x numbers are default numbers the computer is given if a DHCP server is not found.

Releasing/Renewing an IP Address on a Windows NT/2000 Machine
On some operating systems (such as Windows NT/Windows 2000) you must use the DOS Command Prompt to release and renew a computer's IP Address.

To release the IP Address:
1. Select the *Start* menu in the lower left hand corner of your screen.
2. Click *Run*.
3. In the *Open* box type **command** and select *OK*.
4. Type **ipconfig /release** and hit your *enter* key (note: there is a space between *ipconfig* and the forward slash/).

To renew the IP Address:
From the DOS prompt, type **ipconfig /renew** and hit your *enter* key (note: again, there is a space between *ipconfig* and the slash.)

The Need for Speed

Let's face it, 28.8K baud modems just don't cut it anymore. Even 56K connections are becoming more and more out of favor. Most likely you ordered RCN cable modem service because it was advertised as being much faster than your analog modem. And, under normal circumstances, it should be. But what if your download speeds just aren't what you think they should be? Unfortunately, there are many factors that can affect your download speeds, also known as throughput. To wade through this madness, let's first determine the speed of your connection.

How can I tell the actual bandwidth I am receiving?
The best way to do this is to download something large from the Internet, either via FTP or your browser. While you're downloading the file or program, your client (your FTP application or browser) should tell you the rate at which that file is downloading. Beware though. Some applications will report your throughput in terms of Kbps (Kilobytes per second), while others will report your throughput in terms of kbps (kilobits per second; note the lower case k). There is a gigantic difference between these two statistics. To make sure you are comparing apples to apples, make sure you are converting all your calculations into either bits or bytes. To convert bits to bytes, simply divide the number of bits per second by 8 (there are 8 bits to the byte). To convert from bytes to bits, multiply the number of bytes per second by 8.

As an example, a 28.8 baud modem transfers, at best, 28.8 kilobits of data per second, or 3.6 Kilobytes per second (28.8/8 = 3.6). This means that at best with a 28.8 baud modem, you can download a 1 meg file (1 Megabyte = 1024 Kilobytes) in just under 5 minutes (1024/3.6 = 284 seconds, or 4.7 minutes). By comparison, a cable modem may transfer data up to 500 kilobits per second (roughly 62 Kilobytes) or more! That same 1 Megabyte file could be transferred in about 16 seconds, or even faster, with your cable modem!

Yeah, but I'm not getting that!
Unfortunately, this is only part of the story. The numbers given above are *best case* scenarios. There are numerous factors which can affect your throughput.

First, where are you connecting to? The site you are accessing may have sluggishness on its end due to too many people accessing the site at the same time or not enough server power to handle the load. Additionally, the route between your cable modem and the destination may have problems. Think of it like an airline flight from New York to California in January. If there is a big snow storm in Chicago or Denver, or even both, chances are excellent your flight is going to be delayed even if the weather is perfect in New York and in California. Your data works in a similar

fashion. To get to you, it has to make its way through numerous servers, routers, and fiber; most of which RCN has no control over. To eliminate this as a possibility for your slowness concerns, try going to various different sites, including sites which you know are not likely to have much traffic. If you don't have the same problem as with the sluggish site you were on, chances are excellent that there is something at the destination or in the route to the destination that is the culprit.

Another speed factor can be the cable modem or your computer. If this is the case, a simple power cycling of each may solve the problem. See the section on *Basic Power Cycling Procedures* on how to do this.

An additional point to note is that your cable modem is connected to a shared network. While RCN does all it can to prevent any one area from becoming overloaded, during peak times you may find that your connection becomes a little slower as more and more people in your area are actively using the Internet.

If you feel your throughput is significantly slower than you feel it should be, please contact Technical Support. It is possible there could be a problem which requires our intervention.

Basic Power Cycling Procedures

Power cycling is simply a reboot brought about by turning off the modem power and turning it back on. However, it is important that you follow the order of operations below when you power cycle a cable modem.

1. Shut down the client computer.
2. Remove the power cable from the modem. This can be done at the wall outlet or at the modem itself (for the RCA modem, disconnect the power at the wall outlet or the power adapter). If there is an external analog modem, turn it off too.
3. Wait 1-2 minutes.
4. Turn on the external analog modem (if equipped).
5. Restore power to the cable modem.
6. Observe the sequence of the lights. When the status light arrives at a solid green, turn on the client computer.

If you are still experiencing modem problems after completing this procedure, please contact our technical support department.

Section 5
Email Set-up and Configuration

There are many email software options available to you as an RCN cable modem user. While we cannot show you how to configure each of these options, they do require the same pieces of information: your full name, your account name, your email address, and the POP and SMTP server names. If you do not need help navigating your email program to enter these values, here is all you need.

Full Name: This will be your name, or whatever name you would like your messages to come from.

Account Name: This will be the first part of your email address; everything that falls before the @ symbol. If your email address is johndoe@rcn.com, your account name will be johndoe.

Email Address: Using the above example, johndoe@rcn.com. Replace johndoe with your own unique name

POP Server Address: pop.rcn.com (pop.rcnchicago.com for Chicago customers)

SMTP Server Address: smtp.rcn.com (smtp.rcnchicago.com for Chicago customers)

Setting up email Accounts for IBM Compatible Computers

Creating an E-mail Account in Netscape Navigator or Messenger 4.x

1. In either Netscape Navigator or Messenger select *Edit* at the top of the screen. From the *Edit* menu, select *Preferences*.
2. On the left-hand side of the *Preferences* box double-click *Mail & Newsgroups* to open the options below it. Select *Identity* and the identity options will appear on the right-hand side of the box. Type your full name in the *Your Name* box and enter your RCN email address in the *Email Address* box.
3. Go back to *Mail & Newsgroups* and select *Mail Servers*. To the right of the *Incoming Mail Servers* box at the top-right of the screen select the *Add* button. In the *Server Name* box type in **pop.rcn.com** (Chicago area customers should enter **pop.rcnchicago.com**). In the *Server Type* box, choose *POP3* from the drop-down menu. In the *User Name* box type in your RCN **account name** then select *OK*.
4. Now in the middle right of the *Preferences* box, in the *Outgoing Mail Server* section, enter **smtp.rcn.com** (Chicago area customers should enter **smtp.rcnchicago.com**) in the *Outgoing Mail Server* box. In the *Outgoing Mail Server User Name* box enter your RCN **account name**.
5. The "*Use Secure Socket Layer (SSL) or TLS for outgoing messages*" option should be checked to *Never*. Click *OK*.

Creating an Email Account in Microsoft Outlook Express 5.0/Outlook 2000

1. Open the program.

2. Select the *Tools* menu and choose *Accounts*

3. Click the *Add* button at the top right of the box, and from the list that pops up select *Mail* to open the Internet Connection Mail Wizard.

4. On the *Internet Accounts* box that pops up, select the *Mail* tab (usually done by default).

5. The first page of the wizard, the *Your Name* page, asks for the *Display Name* (the name which will appear in parentheses next to the email address in an email). Type in your **full name**. Click *Next*.

6. The next page, the *Internet Email Address* page, asks for your *email address*. Select the box next to "*I already have an email account that I'd like to use*." In the box below it, type in your RCN **Email Address**. Click *Next*.

7. The next page, the *Email Server Names* page, asks for the type of incoming Email Servers. The first box says, *My Incoming Mail Server is a _____ Server*. In the drop-down box you should choose *POP3* (it is usually set to *POP3* by default.)

8. In the *Incoming Mail Server (POP3,IMAP,HTTP*) box type **pop.rcn.com** (Chicago area customers should enter **pop.rcnchicago.com**). In the *Outgoing Mail (SMTP) Server* box type **smtp.rcn.com** (Chicago area customers should enter **smtp.rcnchicago.com**). Click *Next*.

9. The *Internet Mail Logon* asks for *Account Name* and *Password*. In the Account Name box, enter your RCN **account name**. In the *Password* box enter your **password** (case sensitive). Click *Next.*

10. If you are using Outlook Express 5.0, the next page should say, *"You have successfully entered the information to create your email account."* Select the *Finish* button at the bottom of the screen to complete the setup.

11. If you are using previous versions of Outlook Express, the next page asks you for a *Friendly Name*. This is just the name of the mail account you have just created and is the name you will see listed in Outlook Express (i.e. *RCN Mail*). Click *Next.*

12. If you are using Outlook 2000, the *Choose Your Connection* page asks you "*Which method do you want to use to connect to the internet*?" You should select the box next to, *"Connect using my local area network (LAN)."* Click *Next.*

13. The last page will tell you that you have successfully created your email account. Select *Finish* at the bottom of the box to complete you email account setup.

Setting up Email Accounts for Macintosh Computers

Creating an Email Account in Netscape Messenger 4.x

1. In either Netscape Navigator or Messenger select the *Edit* menu at the top of the screen and select *Preferences*.

2. On the left-hand side of the *Preferences* box double-click *Mail & Newsgroups* to open the options below it. Select *Identity* and the identity options will appear on the right-hand side of the box. Type your full name in the *Your Name* box and enter your RCN **email address** in the *Email Address* box.

3. Go back to *Mail & Newsgroups* and select *Mail Servers*. To the right of the *Incoming Mail Servers* box at the top-right of the screen select the *Add* button. In the *Server Name* box type in **pop.rcn.com** (Chicago area customers should enter **pop.rcnchicago.com**). In the *Server Type* box choose *POP3* from the drop-down menu. In the *User Name* box type in your RCN **account name**. Click *OK*.

4. In the middle right of the *Preferences* box, located in the *Outgoing Mail Server* section, enter **smtp.rcn.com** (Chicago area customers should enter **smtp.rcnchicago.com**) in the *Outgoing Mail Server* box. In the *Outgoing Mail Server User Name* box enter your RCN **account name**.

5. The "*Use Secure Socket Layer (SSL) or TLS for outgoing messages"* option should be checked to *Never*. Click *OK*.

Creating an Email Account in Outlook Express 5.0

1. In Internet Explorer, click the *Mail* button

2. Click the *New* button

3. In the *New Identity* box, enter a name for this mail profile in the *Identity Name* box and click *OK*.

4. The Outlook Express Setup Assistant will pop-up. Check the box that says, "*I already have an Internet email account, but I have never used that account on this computer* . . ." Click the right arrow to continue.

5. Type your **full name** in the ***"****Display Name****"*** box. Click the right arrow to continue.

6. On the *Internet Email Address* page, select the box next *to "I already have an email address I'd like to use*." In the *Email Address* box type your RCN **email address**. Click the right arrow to continue.

7. On the *Email Server Names* page, where it says, "*My incoming mail server is a* . . .", make sure *Pop Server* is chosen from the drop-down menu. In *the Incoming Mail (POP, IMAP) Server* box type **pop.rcn.com** (Chicago area customers should enter **pop.rcnchicago.com)** and in the *Outgoing Mail (SMTP) Server* box type **smtp.rcn.com** (Chicago area customers should enter **smtp.rcnchicago.com**). Click the right arrow to continue.

8. On the *Internet Mail logon* page, in the *account ID* box type in your RCN **account name**. Type your **password** in the *password* box.

9. On the *Congratulations* page, in the *Account Name* box, type a name that you want to use to identify this email account (ex. *RCN Email*). Make sure that there is a check in the box next to *"Include this account in my Send & Receive schedule."*

10. Click *Finish* to complete the setup.

Section 6
Publishing Your Own Web Site

RCN gives you 10 Megabytes of diskspace in which to house your own personal web site. By default, your web site will be maintained on our servers at no additional charge to you. Please note that these servers do not support Front Page extensions. This means that while you may use Microsoft Front Page to create your web site, you will not be able to use all of the features of the software.

So, where is this space and how do you find it? First, you need software that will allow you to FTP (short for File Transfer Protocol) your files up to RCN's server.

What is FTP?
FTP is the simplest way to transfer files between computers on the Internet. Like HTTP which transfers displayable web pages, FTP is an application protocol that uses the Internet's TCP/IP protocols. FTP is commonly used to transfer web pages from a local computer (like the computer you have at home) to a remote computer (like the web server that RCN maintains). This is known as uploading. That remote computer, or server, then serves those files up to the Internet for everyone to see. FTP can also be used for transferring programs and other files in the opposite direction; from a server to a local computer. This is known as downloading.

How do I use FTP?
There are many different FTP clients available to you on the Internet. If you do not already have an FTP program, you will need to download one. *http://www.tucows.com* has many FTP clients to choose from.

Regardless of which application you download, they will all require the same specific information; host name or FTP site, username, and password. To access your space at RCN, you will need to connect to *ftp.rcn.com* as the host name. Your username and password are the same as your main email account name and password. Please note that RCN's Chicago customers will connect to *ftp.rcnchicago.com*.

Once connected to the host computer (*ftp.rcn.com* or *ftp.rcnchicago.com*) most FTP clients will be split into two parts; one for the remote computer and one for the local machine. Find the files you want to upload on your local machine and simply transfer them to the remote computer. Most FTP clients will allow you to either double click the file in question or drag it to the other side with your mouse to complete the transfer. For Chicago customers, before transferring, you will first have to double click the *public_html* directory located on the remote computer in order to change to it.

When uploading and downloading files via FTP it is important to remember that some FTP clients will not ask you before overwriting files. Obviously this can lead to unwanted data loss, so it may be necessary to back some data up before transferring any files. At very least, pay careful attention to the file names listed on both the local and remote side.

Where is my site?
After you've uploaded your site to RCN's server, it will be available to you immediately via any web browser. Simply go to *http://users.rcn.com/account_name*. Chicago customers will find their web pages at *http://www.rcn.com/~account_name*. You'll want to replace *"account_name"* with your actual account name.

Now, if you don't want people to have to specify the file name of your home page in the URL, simply call your main page *index.html* (all lower case). *Index.html* is the file that is generally the "home", or first page of a web site. In order for this page to appear properly it must be in the home directory of the web site. If this file is in any other directory, or is named anything other than *index.html*, your site won't be displayed properly.

Section 7
FAQ & Glossary of Internet Terms

Can I have more than four email address?
RCN cable modem service includes four (4) POP email accounts/email addresses. Additional email boxes can be purchased for a nominal fee through customer service.

Does RCN Cable Modem Service include chat and newsgroup options?
Yes. For chat, feel free to access AOL Instant Messenger, ICQ, IRC, and many others. In addition, we offer over 45,000 newsgroups to keep you in touch with people who share your interests. If we do not carry one of your favorite newsgroups, please feel free to email us at *news@rcn.com* and we'll make every attempt to add it for you.

What is AOL Instant Messenger?
Instant messages are an online conversation between two or more people who have AOL Instant Messenger (AIM) or America Online software. It is important; however, to differentiate between the two. The America Online software (NOT AIM) is intended strictly for America Online customers to use with their AOL account. AIM (AOL Instant Messenger) is currently a free program that anyone using any Internet connection can download and use with other people who have AIM. Other alternatives for AIM include MSN Messenger, Yahoo Messenger, or ICQ, which you and your friends can download for free. These programs offer you virtually the same functionality; to chat with your friends via text over the Internet. Currently, all of the messaging software listed above (with the exception of American Online software) can be used with RCN's cable modem service.

Can I access my AOL account from my Cable Modem Service?
RCN high speed cable modem service is compatible with AOL's Internet service. AOL offers a service called *Bring Your Own Access (BYOA).* It allows you to connect to the Internet through any Internet service provider (in your case, RCN) and still access AOL's proprietary channels, features, and services. Visit *www.aol.com* to learn more.

Please note that RCN does not provide technical support for AOL products. If you are unable to correctly set up or use AOL, it may be necessary to call AOL's technical support department.

Can I attach a server to your network?
Sorry, but no. RCN Cable Modem Service is for residential use only and our network will not support or allow servers of any kind from the home.

Can I set up my home network to take advantage of RCN's cable modem services?
Yes, it is possible to allow multiple computers to take advantage of an RCN cable modem for an additional fee. However, it is important to note that home networking will not be supported by RCN. It is solely the responsibility of the end user. In situations where there is assumed to be an issue with the home network, RCN support will not be able to provide free technical assistance.

For a more complete listing of commonly asked questions, please visit our web site at http://*www.rcn.com* and click on the Internet link located on the bottom of the page.

Glossary of Internet Terms

Bandwidth The amount of data that can be sent through a connection, usually measured in bits-per-second.

Baud The baud rate of a modem refers to the speed of the modem. It will tell you how many bits the modem can send or receive per second. For example, a 28.8 baud modem can send or receive 28,800 bits per second (bps).

Bit A bit is a binary digit, either a 1 or a 0. 8 bits are needed to make a byte, or one character of data.

Browser The application that is used to view web pages. Netscape and Internet Explorer are examples.

Byte A byte is comprised of 8 bits. It takes one byte to make a single character (such as the letter 'e').

Domain Name A domain name is a name which is used to find a specific location on the Internet. Domain names are tied to specific IP addresses assigned to given hosts. While domain names are not necessary to find given hosts on the Internet, they are much easier to remember. As an example, rcn.com is a domain. If you wanted to go to RCN's web page, you could either enter www.rcn.com or 207.172.3.77 in your browser.

Email E-mail, or electronic mail, is a method of sending text messages from one person's computer to another through the Internet. An email address would look something like johndoe@rcn.com.

Ethernet A technology which allows you to network machines together in a local area network (LAN). Ethernet is commonly used because of its incredible speed.

Firewall A firewall is a security device that allows you to prevent unwanted accesses into, or out of, your network. A simple firewall can be built by installing firewall software on a computer linked to a network. .

FTP FTP stands for File Transfer Protocol and is a simple way to transfer files between computers on the Internet.

Gigabyte 1 gigabyte = approximately 1 billion bytes. More accurately, 1 gigabyte = 2 to the 30^{th} power or 1,073,741,824 bytes.

Home Page (or Homepage) A home page most often refers to the first web page that appears when you go to a specific site like www.rcn.com. It can also refer to the web page you see when you first start up your browser.

HTML HTML, or HyperText Markup Language, is the most common language used to create web pages. HTML is a language which essentially formats text and images in any number of ways. HTML also allows you to create links which will point people to various other parts of that web site, or to other web sites altogether.

HTTP HTTP, or HyperText Transfer Protocol is the protocol that is used to transfer web pages across the Internet.

Hypertext Hypertext is the name given to the ability to link documents to other documents within a web page or throughout the Internet.

Internet The Internet is made up from the millions of servers which are interconnected via the TCP/IP protocol. The Internet evolved from its humble beginnings as the ARPANET in the late 60's and early 70's.

Intranet An intranet is like a small private Internet which is intended to be accessed by a specific group or groups of computers. Often companies will set up intranets for their own internal use to allow employees to see company information without allowing access to this private information by the entire Internet.

IP Address An IP address is the address given to each computer that is on the Internet. Without an IP address, a computer cannot communicate with the rest of the computers on the Internet. These addresses have 4 parts, known as octets, and are separated by dots, e.g. 207.229.143.1.

Kilobyte Approximately one thousand bytes. More accurately, 1024 bytes or 2 to the 10^{th} power.

LAN A LAN, or Local Area Network, consists of a network of machines confined to one geographic area, such as an office building.

Megabyte Approximately one million bytes. More accurately, 2 to the 20^{th} power, or 1,048,576 bytes.

Network A network is 2 or more computers connected together (commonly using ethernet) to allow for file and resource sharing.

NIC A NIC, or Network Interface Card, is the card that plugs into a computer that allows the computer to be hooked up to a network. Cable modem service depends on your computer having a NIC.

Node Any given computer connected to a network.

PPP PPP, or Point to Point Protocol, is the protocol that is used to make an Internet connection using an analog modem and a phone line.

Router A router is a machine that determines where to send pieces of data between networks. Because there may be multiple paths between 2 or more networks, a router will also determine the best path for that data so that it finds its destination quickly and successfully.

Server A server is a machine that provides a service to software running on other machines. For example, a web browser (the client) must communicate with a web server in order to display web pages. It is possible for one server to perform many roles depending on how many server software packages are installed on it.

SMTP SMTP, or Simple Mail Transport Protocol, is the protocol used to send electronic mail over the Internet.

Spam An inappropriate use of email, mailing lists, USENET (newsgroups), or other communication methods by sending a message to someone who didn't ask for it. Spam is analogous to junk mail that you receive in your mail box. Spam is generally sent to multiple people at one time for the purpose of advertising a business (beware the "Make Money Fast" email), propagate chain mail ("Send this message to 10 people", etc) or interest you in going to various web sites (commonly adult oriented in nature). Apart from being bad etiquette, sending SPAM from your RCN account is prohibited.

UNIX UNIX is a computer operating system like Windows, DOS, or the Mac OS. Unlike these other operating systems which are all single user environments, UNIX is designed to be used by many people at the same time and has TCP/IP built-in to it to facilitate that goal.

URL A URL, or Uniform Resource Locator, is the address of any resource on the Internet such as a web page, an FTP site, or a newsgroup, e.g. http://www.rcn.com. If someone asks you for your web address, they're really asking you for the URL.

Section 8
Contacting Support

RCN is committed to assisting you quickly, effectively, and in a friendly manner. If you cannot find the answers you are looking for either via this user guide or through our web site (http://www.rcn.com), please contact our customer service department via email or by phone. If you do not have an emergency and don't need to speak to a customer service representative immediately, we suggest writing us at support@rcn.com. Under normal circumstances, you should expect a reply within 2 hours of sending your note, and often much less. If your service is not functioning, or you need immediate assistance, please call us at 1-800-RING-RCN.

It is a good idea to have certain information available when contacting our support staff. Please write down the following information and keep it handy in case you should experience any trouble with your service.

Modem MAC Address _____

Modem Serial Number _____

Modem Model _____

User Name _____

Section 9
Acceptable Use Policy

For a complete copy of this document, please see http://www.rcn.com/internet/agreement.html.

RCN's dedication to customer service means that RCN strives to maintain an Internet Access Service ("Access Service") that provides RCN customers with an enjoyable Internet experience, and an experience that is free from interference by persons who use the Access Service in an improper or unlawful manner. RCN's Online Policies address frequently asked questions regarding proper online conduct. These policies include information on: RCN Account Charges; the content of the material that you may find on or through the Access Service; goods and services available online through the Access Service; and procedures for reporting complaints regarding a person's online conduct.
RCN's Online Policies, including the following list of Prohibited/Abusive Activities, are part of your subscriber agreement. Please note that if you engage in any such activities, RCN may suspend or terminate your account.
As explained in your subscriber agreement, your use of RCN Internet Access Service must be governed by all applicable laws and regulations, including all applicable local, state, national, and international laws and regulations. In addition to other applicable laws, this includes all laws relating to copyright, trademark, trade secrets, obscenity, defamation, rights of privacy and publicity, false advertising, and fraud.
In addition to such laws and regulations, when using the Access Service you must use your best efforts to avoid interfering with any other person's use and enjoyment of the Access Service. You must also ensure that your use of the Access Service is governed by generally accepted rules of proper Internet conduct.
Please use your best judgment, be respectful of other subscribers, and take the time to review the activities listed below. These activities are not proper Internet conduct and are prohibited activities on the Access Service. Following these rules will ensure that everyone has an enjoyable Access Service experience.

PROHIBITED / ABUSIVE ACTIVITIES
For purposes of the Prohibited/Abusive Activities, the term "content" means information or material of any type capable of being posted or transmitted on or through the Access Service, including material in print, graphic, pictorial audio, or audio-visual form.
When using the Access Service:

(a) Defamation. You agree not to post or transmit any content in violation of any applicable law of libel or defamation in the United States or elsewhere.

(b) Fraud. You agree not to post or transmit any fraudulent content on or through the Access Service. This includes any content that you know or have reason to know is false, and that you intend for others to rely on.

(c) False Advertising. You agree not to post or transmit on or through the Access Service any advertising or promotional materials that contain false, deceptive, or misleading statements, claims, or representations.

(d) Unsolicited Advertising. You agree not to post or transmit any unsolicited advertising, promotional materials, or other forms of solicitation to other subscribers, individuals, or entities, except in those areas (e.g., classified advertisement areas) that are designated for such a purpose. You further agree not to involve or associate RCN in any way with the posting or transmission of unsolicited advertising, promotional materials, or other forms of solicitation, including but not limited to unsolicited advertisements sent from another service provider advertising an RCN-hosted web page, and unsolicited advertisements sent from another service provider which request that replies be sent to an RCN email address.

(e) Copyright Violations. You agree not to post or transmit on or through the Access Service any content that infringes another person's or entity's copyright in all or any part of the content.

(f) Trademark, Service Mark, and Trade Dress Violations. You agree not to post or transmit on or through the Access Service any content that infringes, dilutes or otherwise violates another person's rights in its trademarks, service marks, trade dress, or other indicia of origin.

(g) Trade Secret Violations. You agree not to post or transmit on or through the Access Service any content that reveals trade secrets or other confidential or proprietary information belonging to another person or other entity.

(h) Obscenity. You agree not to post or transmit any obscene or pornographic content, including, but not limited to, child pornography, on or through the Access Service.

(i) Harassment, Threats, and Abuse. You agree not to use the Access Service to harass, intimidate, threaten, or abuse any person or entity, by any means, including the use of vulgar, hateful, racially or ethnically offensive, sexually harassing, or otherwise objectionable content.

(j) False Pretenses. You agree to not use the Access Service to impersonate any person, including but not limited to, an RCN official or an information provider, guide, or host, or communicate under a false name or a

name that you are not entitled or authorized to use in all forms of online communication, including, but not limited to, screen names, subscriber profiles, chat dialogue, and message posting.

(k) Chain Letters. You agree to not post or transmit chain letters, or letters or messages that offer a product or service based on the structure of a chain letter, on or through the Access Service.

(l) Inappropriate Content. You agree not to post or transmit on or through the Access Service content that is patently inappropriate material under the circumstances -- e.g., content or topics not related to the topics focused on by the participants in a particular news group or mailing list.

(m) Scrolling. You agree not to cause the screen to "scroll" faster than other subscribers or users are able to type to it, or any action to a similar disruptive effect on or through the Access Service.

(n) Disruptive Activities. You agree not to use the Access Service to disrupt the normal flow of online dialogue, or otherwise act in a manner that negatively affects use of the Internet by other subscribers, users, individuals, or entities.

(o) Violations of Service Providers' Rules. You agree to not use the Access Service to violate any operating rule, policy, or guideline of any other online service provider or interactive service.

(p) Multiple Access. You agree that this Agreement is not transferable. You agree not to simultaneously access the Access Service for more than one session at any time.

(q) Abuse of RCN Procedures. You agree not to make false or unverified complaints against any RCN subscriber, or otherwise abuse any of RCN Complaint Response Procedures.

(r) Systems Abuse. You agree not to abuse RCN's system, or any other system accessible through the Internet via RCN, by causing any harm to the system so that it inhibits or negatively impacts the ability of other users to effectively use such system. You further agree not to compromise or attempt to violate security at RCN or elsewhere, including but not limited to, attempted access of any data, server, or account that you are not expressly authorized to access.

(s) SPAM. You agree not to post or cross post, regardless of content, copies of the same message to 20 or more newsgroups.

(t) Support Abuse. You agree not to harass, threaten or abuse authorized representatives of RCN, including but not limited to tech support representatives, customer relations representatives, and sales representatives, or otherwise abuse RCN's support services.

(u) Inappropriate software, products, and services. You agree not to post, transmit, promote, or otherwise make available any software, product or service that is illegal, violates the rights of RCN or a third party, or is designed to violate this Agreement. Such software, products or services include, but are not limited to, programs designed to send unsolicited advertisements (i.e. "spamware"), services which send unsolicited advertisements, programs designed to initiate "denial of service" attacks, mail bomb programs, and programs designed to gain unauthorized access to networks on the Internet.

(v) Reselling. You agree not to resell RCN services or products without an express written agreement with RCN to do so.